

REMARKS

Claims 12-21 are all the claims pending in the application.

I. Response to Rejection of Claims 17-20 under 35 U.S.C. § 103(a)

Claims 17-20 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Higo et al. (US 2001/0001049) in view of Claessens et al. (2001/0007280) and Fujita et al. (US 2004/0202889).

Applicants respectfully traverse the rejection.

Claim 17 recites a method for producing a very high mechanical strength steel sheet coated with zinc or zinc alloy, comprising the steps of: producing a slab having a chemical composition, in % by weight, consisting of: $0.060\% \leq C \leq 0.250\%$; $0.800\% \leq Mn \leq 0.950\%$; $Si \leq 0.300\%$; $Cr \leq 0.015\%$; $0.100\% \leq Mo \leq 0.500\%$; $0.020\% \leq Al \leq 0.100\%$; $P \leq 0.100\%$; $B \leq 0.010\%$; and $Ti \leq 0.050\%$, the balance being iron and impurities resulting from the production of the slab, the microstructure thereof being constituted by ferrite and martensite, hot-rolling then cold-rolling the slab in order to produce a sheet, heating the sheet at a rate of between 2 and 100°C/s until a holding temperature of between 700 and 900°C is reached, cooling the sheet at a rate of between 2 and 100°C/s until a temperature is reached which is about that of a bath containing molten zinc or a zinc alloy, then coating the sheet with zinc or a zinc alloy by means of immersion in the bath and cooling it to ambient temperature at a cooling rate of between 2 and 100°C/s , wherein the steel is dual-phase; and wherein the steel is used for producing automotive components.

Higo relates to steel that are used for buildings having an improved resistance at high temperatures which allow them to resist a longer time under fire. In addition, in contrast to the steel of claim 17, the steel of Higo does not have a dual-microphase microstructure. It is submitted that one of ordinary skill in the art would understand that the steels of Higo do not

have a dual-phase structure for the reasons set forth in the Amendment filed on July 9, 2010.

In addition, a Declaration under 37 C.F.R. § 1.132 executed by Antoine Moulin is submitted herewith.

Regarding Claessens, the composition of Claessens contains a significant amount of Cr (0.2% at least) and is related to the content of Mo. In contrast, in the present invention, the amount of Cr is at most 0.3% (i.e., can be absent), and has no relationship with Mo. In addition, Claessens has a Mn range much wider than that of the present invention (0-1.5% and 0.4-0.95%, respectively). Furthermore, Al is present in the present invention while it is absent in Claessens.

It is submitted that one of ordinary skill in the art would not have been led to combine Claessens with Higo because the steel of Higo is simultaneously broad with respect to the amounts of Si, Mn, Al and Mo, and the compositions of its Examples have an Mn content that is far from that of the present invention. Moreover, the functions of Mn are different in Higo and in the present invention. That is, in Higo, Mn is added for deoxidation and formation of Mn sulphides, while in the present invention it is used for improving quenchability.

In addition, Fujita does not disclose the cooling speed after galvanization specifically, and the compositions of Fujita are much broader regarding the amounts of Mn, Al, Mo, and in some cases Si, than the present invention.

To arrive at the present invention, a person of ordinary skill in the art would have had to somehow combine Claessens and Higo, and then further modify the composition and process. It is submitted that one of ordinary skill in the art would not have done so based on the technical differences in Claessens, Higo and Fujita, and thus would not have arrived at the claimed invention.

For at least the foregoing reasons, it is submitted that a *prima facie* case of obviousness

has been established and that claim 17 is patentable over the cited art.

In addition, claims 18-20 depend from claim 17, and thus it is respectfully submitted that these claims are patentable for at least the same reasons as claim 17.

In view of the above, withdrawal of the rejection is respectfully requested.

II. Conclusion

In view of the above, reconsideration and allowance of claims 12-21 is respectfully requested.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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